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RESEARCH BRIEF:
Measuring Medicaid Physician Participation Rates & Implications for Policy

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ABSTRACT

Policymakers continue to debate Medicaid expansion under the ACA, and concerns remain about low provider participation in the program. However, there has been little research on how various measures of physician participation may reflect different elements of capacity for care within the Medicaid program, and how these distinct measures correlate with one another across states. Our objective was to describe several alternative measures of provider participation in Medicaid using recently publicly available data; to compare state rankings across these different metrics; and to discuss potential advantages and disadvantages of each measure for research and policy purposes. Overall, we find that Medicaid participation as measured by raw percentages of physicians taking new Medicaid patients is only weakly correlated with population-based measures that account for both participation rates and the numbers of physicians per capita or physicians per Medicaid beneficiary. Participation rates for all physicians versus primary care physicians also offer different information about state-level provider capacity. Policymakers should consider multiple dimensions of provider access in assessing policy options in Medicaid, and further research is needed to evaluate the linkages between these provider-based measures and beneficiaries' perceptions of access to care in the program.

Key Words: Medicaid, access to care, primary care, physician participation

INTRODUCTION

Medicaid is the primary insurer for low-income Americans and already had added more than 10 million new beneficiaries to the program under the Affordable Care Act (ACA). While previous research demonstrates that expanding Medicaid improves access to care (Baicker et al., 2013; B. D. Sommers, Baicker, & Epstein, 2012), the program's lower reimbursement and provider participation rates compared to private coverage have fueled significant debate about Medicaid's value (P. Cunningham & May, 2006; Decker, 2012; Gottlieb, 2011).

One recent analysis revealed that 69% of physicians accept new Medicaid patients, compared to 82% for private insurance (Decker, 2012). State Medicaid participation rates varied from 40% to 99% and were correlated with Medicaid provider payment levels consistent with previous studies (P. J. Cunningham & Hadley, 2008; Hadley, 1979; Sloan, Mitchell, & Cromwell, 1978; Zuckerman, McFeeters, Cunningham, & Nichols, 2004). Rates for pediatric providers are higher, approximately 83% based on one recent study (GAO, 2011). Increased Medicaid provider payments appear to improve access, with studies demonstrating small gains in children's access to dental care (Buchmueller, Orzol, & Shore-Sheppard, 2013) and increases in the likelihood that primary care physicians accept new Medicaid patients (Wilk, 2013), though not all payment increases have led to such improvements (Coburn, Long, & Marquis, 1999). Most recently, the ACA temporarily raised Medicaid primary care reimbursement rates to Medicare levels in 2013-2014, and recent evidence suggests that this policy increased provider willingness to see new patients in Medicaid (Polsky et al., 2015). However, in the absence of renewed federal funding for this payment increase, each state has had to choose for itself whether to continue the increased reimbursement at state expense.

While there has been significant interest in these issues of Medicaid payment and provider participation (Hahn, 2013; Thomas, Parish, Rose, & Kilany, 2012), there has been less research on how different measures of physician participation correlate across states. Furthermore, there has been relatively little consideration in policy circles of how different measures can contribute substantially different information about potential barriers to care for low-income beneficiaries in public insurance. Accordingly, it is unclear which metrics policymakers should focus on when exploring different policy considerations. For instance, provider participation can be assessed based on the percentage of accepting physicians versus the number of accepting physicians per capita or per beneficiary. Alternatively, one can consider the overall physician participation rate versus estimates limited to primary care providers. Several studies have suggested that the number of doctors in an area may be a critical predictor of access to outpatient care (P. J. Cunningham, 2011; Wright & Ricketts, 2010), but this denominator is not reflected in the simple participation percentages that are most typically cited in policy debates.

Our study explores two important questions in this area: 1) What kinds of information can be conveyed through alternative measures of provider participation? 2) How does the performance of different states in terms of provider participation in Medicaid correlate across these alternative measures?

METHODS

Data & Approach.

We collected state-level data for all 50 states and the District of Columbia on physician participation in Medicaid from several sources, including previously published research, Census

data, and government reports, as described below. We considered the following alternative measures of physician participation in Medicaid:

1. *Statewide percentage of physicians accepting new Medicaid patients* – These data came from Decker’s analysis of the 2011 National Ambulatory Medical Care Survey (NAMCS) Electronic Medical Records Supplement (Decker, 2012), which surveyed office-based providers about Medicaid acceptance rates – presumably capturing both fee-for-service and managed care models of Medicaid.
2. *Number of Medicaid-accepting physicians per 100,000 residents* – This measure was calculated by multiplying measure #1 by the number of state physicians per 100,000 residents, from the Area Resource File.
3. *Number of Medicaid-accepting physicians per 100,000 poor residents* – The same as measure #2, except the denominator was limited to the number of state residents living at or below the Federal Poverty Level, also from the Area Resource File.
4. *Number of Medicaid-accepting physicians per 100,000 Medicaid beneficiaries* - The same as measure #2, except the denominator was limited to the number of state residents enrolled in Medicaid, from the Kaiser Commission on Medicaid and the Uninsured.

We then constructed the analogous set of four state-level measures (measures #5-#8) limited to primary care physicians only (Decker, 2013), rather than all physicians. All measures used data from 2011, to be consistent with the NAMCS-based state level estimates used to derive each measure.

Our statistical analysis was descriptive. We ranked all 50 states plus the District of Columbia on each of the different measures of physician participation in Medicaid. We then

calculated correlation coefficients between the state-by-state rankings for the alternative measures. For Wyoming, primary-care specific estimates were not available due to sample size limitations in the NAMCS.

RESULTS

Table 1 presents several four of the measures of physician participation, with state rankings (50 states plus Washington D.C.) for each measure. Table 2 shows the pairwise correlation coefficients for all eight of the measures.

The rankings show fairly strong correlation ($\rho = 0.72$) between the two percentage-based measures: percentage of all physicians in the state accepting Medicaid and percentage of primary care physicians accepting Medicaid.

However, the percentage of Medicaid-participating physicians was only weakly correlated with the number of Medicaid-participating physicians per 100,000 residents ($\rho = 0.30$), the number of Medicaid-participating physicians per 100,000 poor residents ($\rho = 0.29$), and the number of Medicaid-participating physicians per 100,000 Medicaid beneficiaries ($\rho = 0.41$).

For primary care, rankings were moderately correlated for the simple percentages of Medicaid-participating PCPs in the state and the number of Medicaid-participating PCPs per-capita ($\rho = 0.64$), per-low-income person ($\rho = 0.46$), or per-Medicaid beneficiary ($\rho = 0.55$).

Changing the denominator from the total population to the population below the poverty level or the number of Medicaid beneficiaries had less impact, as these three measures produced highly correlated rankings ($\rho = 0.61$ to 0.88) for all physicians and for primary care physicians.

Results were similar for the correlations between the underlying measures, as opposed to the state rankings.

Figures 1 and 2 present maps of the 50 states for the percentage of physicians accepting Medicaid and the number of primary care physicians accepting Medicaid per 100,000 residents, respectively.

Percentage-wise physician participation rates were generally highest in the Great Plains states, while per capita primary care participation rates were high in the Great Plains, upper Midwest, and Northeast. Several states appear to have markedly different physician capacity in Medicaid, depending on the choice of measure. Figure 1 shows Arkansas and South Carolina to both be in the top quartile for Medicaid-physician participation rates, but Figure 2 shows that these states are both in the lower half of available PCPs per capita in Medicaid. In contrast, Vermont and Massachusetts go from the middle of the pack in terms of participation percentages into the top five when taking into account the number of PCPs per capita. Finally, New York moves from being one of the 5 states with the lowest Medicaid participation rates in the country when using raw percentages into the top quartile when looking at PCPs per capita.

DISCUSSION

In our analysis of 2011 statistics on physician participation in Medicaid, we find that assessments of state capacity for patient care in the program depend critically on which measure is used to estimate physician participation.

The percentage of physicians accepting new Medicaid patients has the appeal of simplicity and is frequently cited in the literature (Decker, 2012, 2013; Rhodes et al., 2014; Tipirneni et al., 2015). However, focusing solely on this measure ignores the key component of

the size of the physician workforce in each state. For within-state analyses over time – e.g. in assessing the impact of a payment increase in Medicaid (Polsky et al., 2015), or response of providers to a coverage expansion (Tipirneni et al., 2015) – this is a reasonable metric, given that the supply of physicians in a state is fairly stable over short periods of time. However, our findings suggest the need to translate these raw percentages into other measures of physician-related barriers to care in Medicaid when making comparisons across states.

Our findings are consistent with previous reports highlighting the role of physician capacity, as opposed to just program participation, in assessing access to care (Bisgaier, Rhodes, & Polsky, 2014; P. J. Cunningham, 2011). This makes intuitive sense, as people in state with a very high percentage of doctors taking Medicaid against the backdrop of a major physician shortage likely still experience barriers to access. In contrast, a state with a larger physician workforce may not need to elicit participation from a high fraction in order to have adequate capacity to care for Medicaid patients. For instance, examining only the percentages of physicians participating in Medicaid in states like New York, Vermont, and Massachusetts may understate those states’ capacity for providing care to low-income adults, which is inconsistent with the generally observed pattern of greater access to care in Northeastern states in a recent report by the Commonwealth Fund on state health system performance (McCarthy, Schoen, & Radley, 2014).

We also find that measures for primary care physicians can differ fairly substantially in some states from measures for all physicians. States have wide discretion in setting provider payment rates, which produces variation across states in the relative reimbursement for procedure-based or specialty care relative to primary care. Moreover, though the ACA’s Medicaid payment increase in 2013-2014 focused on primary care providers only, both direct

patient surveys and interviews with state Medicaid officials indicate that specialty-related access barriers in Medicaid may be an even bigger challenge for the program (S. K. Long, Stockley, Grimm, & Coyer, 2012; B. D. Sommers, Gordon, Somers, Ingram, & Epstein, 2014).

Here, we focused on measures readily available using data in the public domain. But they lack important nuances that future efforts in this area should capture. In considering the usefulness of provider participation rates for policy purposes, three additional considerations suggest that even the set of eight measures discussed in this paper are inadequate to fully capture provider-level policy concerns. First, whether providers accept *new* Medicaid patients does not convey information about whether they *already* care for Medicaid patients, or how many patients they are willing to care for (Perloff, Kletke, & Fossett, 1995; A. S. Sommers, Paradise, & Miller, 2011). Measures that capture both a provider's existing Medicaid panel size and their overall clinical workload (i.e. how many full-time equivalent providers are caring for Medicaid patients) would provide valuable additional information.

Second, participation rates in isolation do not directly capture information on potential wait times that can vary widely by insurance type (Rhodes et al., 2014). Third, measures focusing exclusively on physicians ignore the growing role played by non-physician providers, particularly in underserved settings.

Finally, it is unclear in terms of access and quality whether having a large number of providers each treating a small proportion of low-income adults is preferable to greater concentration among providers with particular expertise caring for low-income populations (Shi & Stevens, 2007). From this perspective, it may be that lower physician participation rates in Medicaid simply shift the location of care to more traditional safety net providers but do not substantially impede overall access to outpatient care. This view is consistent with at least one

older study of Medicaid, in which reimbursement cuts affected physician participation but did not reduce overall outpatient utilization, suggesting that Medicaid beneficiaries shifted their care to remaining willing providers (S. H. Long, Settle, & Stuart, 1986). Future research that maps these various measures of provider participation to the actual experiences of Medicaid beneficiaries trying to obtain care would be a valuable addition to our understanding of these issues.

Our findings have implications for state policymakers considering whether to use state funds to continue the ACA's Medicaid primary care rate increase. As of April 2015, 15 states are reportedly continuing to pay the Medicare rate for primary care services in Medicaid or have adopted partially higher reimbursement than they had pre-ACA (Advisory-Board, 2015), and others continue to consider this issue (Shartzter, Long, Karpman, Kenney, & Zuckerman, 2015; Wilk & Jones, 2014). Our results suggest that states should not simply focus on their current provider acceptance percentages in determining how high a priority to place on this policy. States with low percentage acceptance rates but large physician workforces may still experience relatively high levels of primary care access for low-income adults, even without increasing payment rates. Meanwhile states with average or even above-average acceptance percentages but few doctors overall may benefit from sustaining higher payment rates. Over the long term, our findings also suggest that policymakers concerned with access in Medicaid should consider policies that increase the size of the provider workforce, especially in lower-income areas with relative shortages.

Our analysis has several important limitations. While statewide estimates are critical for a program like Medicaid, they may not convey as much information about whether individuals in particular localities are able to find providers, and some individuals living near state borders may

pursue care across state lines. The development of more locally-based estimates of provider availability would be useful to guide policy in this area. Our state-based measures of provider participation are also from a single year, precluding any assessment of the stability of these measures over time or response to various policy changes. However, estimates of Medicaid provider participation for all 50 states rely on the enhanced sample size in the NAMCS EMR, which to our knowledge, is currently available only for 2010-2013. Lastly, our analysis is purely descriptive, and does not directly attempt to gauge the relationship between these measures and beneficiaries' experiences obtaining care. Future research exploring these relationships would be extremely valuable.

In conclusion, how best to expand access to care among low-income adults is at the heart of much of the current policy debate over the ACA. Our analysis indicates that assessments of physician participation in Medicaid should be multifaceted, ideally accounting for both the type of physicians in question (primary care versus specialty) and the overall supply of physicians in each state. Furthermore, measures incorporating non-physician providers and provider willingness to care for existing patients (not just new patients) are needed. In broadening our approach to considering provider participation in Medicaid, researchers and policymakers will likely gain a more nuanced understanding of how policy decisions impact the ability of low-income Americans to access needed medical care.

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Table 1: Alternative Measures of Physician Participation in Medicaid, By State Rank

State	% Physicians Accepting Medicaid		Number of Physicians (per 100,000) Accepting Medicaid		% PCPs Accepting Medicaid		Number of PCPs (per 100,000) Accepting Medicaid	
	Percent	Rank	Number	Rank	Percent	Rank	Number	Rank
Alabama	68.5%	36	147.8	46	54.8%	48	33.4	50
Alaska	82.1%	14	186.9	29	76.3%	19	64.5	10
Arizona	78.5%	22	175.5	34	65.6%	31	41.4	40
Arkansas	90.7%	6	183.8	31	81.7%	11	50.7	27
California	57.1%	50	155.1	41	53.7%	49	40.1	42
Colorado	66.1%	42	175.1	35	56.1%	45	43.7	37
Connecticut	60.7%	48	227.2	11	63.5%	36	51.9	25
Delaware	78.3%	24	193.7	25	78.2%	13	55.7	21
DC	75.2%	28	659.2	1	63.3%	37	74.5	4
Florida	59.1%	49	148.5	45	64.3%	33	44.8	34
Georgia	67.4%	40	150.3	44	56.2%	44	35.0	49
Hawaii	69.9%	34	211.0	15	63.8%	35	55.1	23
Idaho	84.7%	11	145.3	47	84.7%	7	49.5	30
Illinois	64.9%	44	187.6	28	58.9%	42	45.6	32
Indiana	70.6%	32	152.6	42	56.0%	46	36.0	48
Iowa	87.6%	8	165.9	38	87.1%	4	62.5	11
Kansas	68.2%	37	155.5	40	63.2%	38	44.9	33
Kentucky	79.4%	21	185.4	30	69.9%	25	44.1	35
Louisiana	62.1%	45	167.0	37	64.0%	34	39.9	43
Maine	74.0%	30	205.3	21	57.7%	43	60.6	14
Maryland	65.9%	43	275.8	5	70.8%	24	61.5	12
Massachusetts	80.6%	18	392.4	2	78.0%	14	79.1	2
Michigan	81.1%	16	212.0	14	76.8%	17	60.4	15
Minnesota	96.3%	2	289.6	3	91.1%	1	80.0	1
Mississippi	79.6%	19	142.7	48	83.5%	8	43.5	38
Missouri	67.6%	39	170.1	36	55.6%	47	37.2	46
Montana	89.9%	7	191.5	26	90.1%	2	66.5	8
Nebraska	87.0%	9	215.4	13	82.5%	10	58.5	18
Nevada	75.2%	29	139.3	49	73.4%	21	41.3	41
New Hampshire	81.7%	15	240.6	9	76.5%	18	69.4	5
New Jersey	40.4%	51	124.8	50	46.0%	50	39.0	44
New Mexico	86.3%	10	206.1	20	83.4%	9	59.4	17
New York	61.6%	46	242.2	8	74.8%	20	61.3	13
North Carolina	76.4%	25	195.7	23	78.7%	12	53.3	24
North Dakota	94.6%	3	227.3	10	89.8%	3	69.4	6
Ohio	72.0%	31	198.1	22	67.2%	29	49.9	29
Oklahoma	67.3%	41	118.0	51	62.6%	40	38.8	45
Oregon	79.5%	20	226.7	12	67.2%	28	59.4	16
Pennsylvania	68.0%	38	209.5	17	65.9%	30	51.8	26
Rhode Island	68.9%	35	268.3	6	63.0%	39	56.4	20
South Carolina	84.1%	12	193.8	24	77.2%	16	50.1	28
South Dakota	94.1%	4	207.9	19	86.5%	5	64.9	9
Tennessee	61.4%	47	163.1	39	68.0%	27	48.4	31
Texas	69.9%	33	152.6	43	64.6%	32	36.7	47
Utah	83.5%	13	182.2	32	77.8%	15	43.5	39
Vermont	78.4%	23	289.5	4	71.6%	23	76.9	3
Virginia	76.0%	27	210.0	16	59.3%	41	43.9	36
Washington	76.4%	26	209.4	18	69.5%	26	57.0	19
West Virginia	80.9%	17	188.3	27	72.8%	22	55.6	22
Wisconsin	93.0%	5	245.1	7	85.0%	6	68.2	7
Wyoming	99.3%	1	179.5	33	N/A	N/A	N/A	N/A

SOURCES: Column 1 is from Decker 2012, Column 3 is from Decker 2013, and Columns 2 and 4 are authors' calculations from those data combined with information on total physicians and primary care physicians per 100,000 residents from the Area Resource File.

NOTES: PCP = "Primary Care Physician."

N/A = "Not Available." Rankings for these measures are from 1 to 50, instead of 1 to 51.

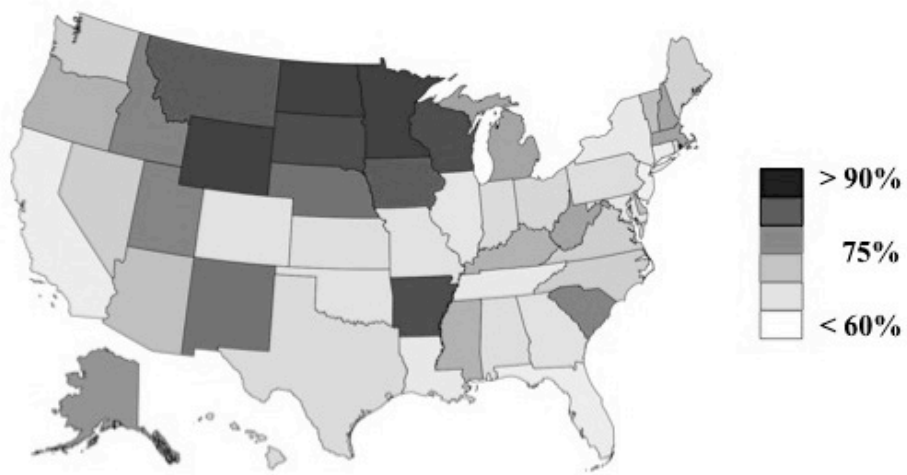
**Table 2: Correlation Between State Rankings of Alternative Measures of
Medicaid Physician Participation**

MEASURE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) % Physicians Accepting Medicaid	1.00							
(2) Number of Physicians (per 100,000) Accepting Medicaid	0.29	1.00						
(3) Number of Physicians (per 100,000 Poor Individuals) Accepting Medicaid	0.28	0.86	1.00					
(4) Number of Physicians (per 100,000 Beneficiaries) Accepting Medicaid	0.41	0.62	0.77	1.00				
(5) % PCPs Accepting Medicaid	0.72	0.33	0.22	0.26	1.00			
(6) Number of PCPs (per 100,000) Accepting Medicaid	0.46	0.81	0.75	0.51	0.64	1.00		
(7) Number of PCPs (per 100,000 Poor Individuals) Accepting Medicaid	0.30	0.74	0.87	0.64	0.46	0.88	1.00	
(8) Number of PCPs (per 100,000 Beneficiaries) Accepting Medicaid	0.47	0.44	0.59	0.79	0.55	0.61	0.76	1.00

NOTES: PCP = “Primary Care Physician.”

Values report correlation coefficient between state rankings for each set of measures.

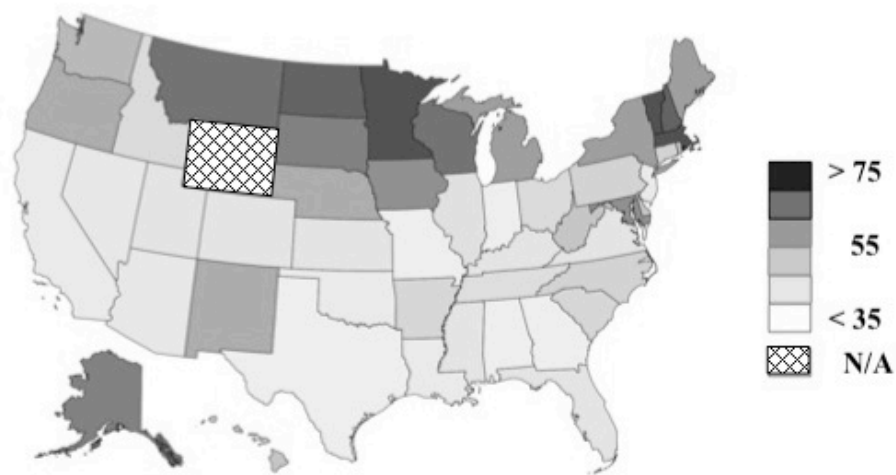
Figure 1: Map of Percentage of Physicians Accepting Medicaid Patients



SOURCE:

2011 National Ambulatory Medical Care Survey (NAMCS), as reported in Decker (2012).

Figure 2: Map of Number of Primary Care Physicians Accepting Medicaid Patients, per 100,000



SOURCE:
Authors calculations based on the 2011 National Ambulatory Medical Care Survey (NAMCS), as reported in Decker (2013), and the Areas Resource File.